We claim:

1. A method of demodulating multiple channels, comprising:

a) providing a first analog to digital converter having an analog input and a digital output;

b) providing a first plurality of digital demodulators, each demodulator having a programmable center frequency;

c) coupling a band of frequencies to the analog input of the converter, the band including a second plurality of channels;

d) creating digitized samples of the band at the output of the first converter;

e) coupling the digitized samples to the plurality of demodulators; and

f) demodulating a first plurality of channels from the band of frequencies.

2) The method of claim oné, further including:

a) maintaining pre-computed sets of D.C. filter coefficients in non-volatile storage, each set corresponding to one of multiple prototype low-pass digital filters, each prototype filter having one of a predetermined set of bandwidths;

b) selecting a first center frequency and first bandpass bandwidth for provisioning a first one of the first plurality of demodulators;

c) retrieving the D.C. coefficients associated with the first bandwidth;

d) subjecting the retrieved D.C. coefficients to a band-pass transformation corresponding to the first center frequency;

e) loading the transformed coefficients into coefficient latches in the first demodulator.

3. The method of claim 3, further including:

a) operating the first demodulator at the first desired center frequency;

b) subsequent to said operating, loading the coefficient latches in the first demodulator with transformed coefficients corresponding to a second desired center frequency; and

c) operating the first demodulator at the second desired center frequency.

4. The method of claim 3, further including:

a) selecting a second center frequency and second bandpass bandwidth for provisioning a second one of the first plurality of demodulators, wherein said first and second bandbass bandwidths are unequal;

b) retrieving the D.C. coefficients associated with the second bandwidth;

c) subjecting the retrieved D.C. coefficients to a band-pass transformation corresponding to the second center frequency; and

d) loading the transformed coefficients into coefficient latches in the second demodulator.

5. The method of claim 1, wherein the converter and the demodulators are within the upstream section of a CMTS channel bank organized into upstream and downstream channels.

6. The method of claim 5, wherein the ratio of the number of upstream channels demodulated by the CMTS channel bank to the number of upstream input connectors of the CMTS channel bank is M.

7. The method of claim 6, wherein M is 16.

8. The method of claim 2, wherein the converter, the demodulators, and the non-volatile storage, are implemented on a single integrated circuit.

9. The method of claim 5, wherein the CMTS channel bank is organized using a plurality of modules, each module having a third plurality of downstream channels and and fourth plurality of upstream channels.

10. The method of claim 9, wherein the third plurality is 4 and the fourth plurality is 16.

11. The method of claim 9, wherein the channel bank has 8 modules.

12. The method of claim 5, wherein the CMTS channel bank has 32 downstream channels and 128 upstream channels.

13. The method of claim 5, wherein the CMTS is DOCSIS compatible.

14. The method of claim 5, wherein the upstream channels are in the 750-1000 MHz portion of the spectrum.

15. The method of claim 14, wherein at least one frequency stacker is used to densely pack each sub-band of the 750-1000 MHz spectrum portion.

16. The method of claim 1, wherein each demodulator uses an FIR digital filter.

17. The method of claim 16, wherein each FIR filter is an Optimum Equiripple Linear-Phase filter.

18. The method of claim 14, wherein the filter coefficients are designed using a Chebyshev approximation.

19. The method of claim 18, wherein the Parks-McClellan Alternation theorem is used in the approximation.

20. The method of claim 19, wherein the coefficients are computed using the Remez exchange algorithm.

21. The method of claim 19, wherein the coefficients are computed using the Rabiner exchange algorithm.

22. The method of claim 2, wherein the number of coefficients for each filter is at least 16.

23. The method of claim 2, wherein the number of coefficients for each filter is at most 24.